

WHAT IS CLAIMED IS:

1. A method of fabricating a liquid crystal display device including a thin film transistor formed at an intersection between a gate line and a data line, and a pixel electrode connected to a source electrode of the thin film transistor and overlapped with at least one of the gate line and the data line with having an organic insulating film therebetween, said method comprising:

forming the thin film transistor, the gate line and the data line on a transparent substrate;

forming the organic insulating film on the transparent substrate to a thickness of between 0.8 μ m and 1.5 μ m; and

forming the pixel electrode on the organic insulating film so as to be overlapped, by a predetermined area, with at least one of the gate line and the data line.

2. The method according to claim 1, wherein a thickness of the organic insulating film provided between the pixel electrode and at least one of the gate line and the data line is less than 1.3 μ m.

3. The method according to claim 1, wherein a dielectric constant of the organic insulating film is less than 3.0.

4. The method according to claim 3, wherein the organic insulating film is made from Benzocyclobutene.

1 5. The method according to claim 1, wherein a parasitic capacitance in an overlapping
2 area where the pixel electrode is overlapped with said at least one of the gate line and the data
3 line is less than 0.0003pF.

1 6. The method according to claim 1, wherein a width of an overlapping area at which the
2 pixel electrode is overlapped with said at least one of the gate line and the data line is greater
3 than 1.5 μ m.

1 7. A liquid crystal display device, comprising:
2 a data line;
3 a gate line;
4 a thin film transistor formed at an intersection of the gate line and the data line;
5 an organic insulating formed on the thin film transistor, the gate line, and the data line
6 to a thickness of between 0.8 μ m and 1.5 μ m; and
7 a pixel electrode formed on the organic insulating film and connected to a source
8 electrode of the thin film transistor, said pixel electrode overlapping at least one of the gate
9 line and the data line.

1 8. The thin film transistor of claim 7, wherein the organic insulating film has a dielectric
2 constant of less than 3.0.

1 9. The liquid crystal display device according to claim 8, wherein the organic insulating
2 film is made from Benzocyclobutene.

1 10. The liquid crystal display device according to claim 7, wherein the thickness of the
2 organic insulating film is less than $1.3\mu\text{m}$.

1 11. The liquid crystal display device according to claim 10, wherein the thickness of the
2 organic insulating film is between $1.25\mu\text{m}$ and $1.27\mu\text{m}$.

1 12. The liquid crystal display device according to claim 7, wherein a parasitic capacitance
2 in an overlap area where the pixel electrode overlaps said at least one of the gate line and the
3 data line is less than 0.0003pF .

1 13. A liquid crystal display device including a thin film transistor formed at an
2 intersection between a gate line and a data line, and a pixel electrode connected to a source
3 electrode of the thin film transistor and overlapped with at least one of the gate line and the
4 data line with having an organic insulating film therebetween, wherein a thickness and a
5 dielectric constant of the organic insulating film are selected such that a signal delay is less
6 than $10\mu\text{sec}$ for each of the gate line and the data line.

1 14. The liquid crystal display device according to claim 13, wherein the thickness and the
2 dielectric constant of the organic insulating film are selected such that a liquid crystal pixel
3 cell driven with the pixel electrode charges to a voltage which is more than 95% of a video
4 data voltage within $1/2$ of an enabling interval of a control signal for forming a channel of the
5 thin film transistor.

1 15. The liquid crystal display device according to claim 13, wherein the thickness of the
2 organic insulating film is less than $1.5\mu\text{m}$.

1 16. The liquid crystal display device according to claim 13, wherein the thickness of the
2 organic insulating film is between $0.8\mu\text{m}$ and $1.5\mu\text{m}$.

1 17. The liquid crystal display device according to claim 13, wherein the thickness of the
2 organic insulating film provided between at least one of the gate line and the data line and the
3 pixel electrode is less than $1.3\mu\text{m}$.

1 18. The liquid crystal display device according to claim 13, wherein the thickness of the
2 organic insulating film provided between said at least one of the gate line and the data line
3 and the pixel electrode is 1.25 to $1.27\mu\text{m}$.

1 19. The liquid crystal display device according to claim 13, wherein the electric constant
2 of the organic insulating film is less than 3.0 .

1 20. The liquid crystal display device according to claim 19, wherein the organic insulating
2 film is made from Benzocyclobutene.

1 21. The liquid crystal display device according to claim 13, wherein a parasitic
2 capacitance in an overlap area where the pixel electrode is overlapped with said at least one of

Crystal display device
between a gate line and a
thin film transistor and
having an organic insul
ing film is between 0.8

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